



U.S. General Services Administration



Emerging Green Technologies

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GSA Motor Vehicle Management
AFV Branch

2015 Federal Fleet Management Training
General Services Administration



GSA Motor Vehicle Management Value Proposition



Right Vehicle



Right Price



Great Service

and the data required to effectively and efficiently manage a fleet



Agenda

- I. Introduction
- II. Alternative Fuel Considerations
- III. Sustainable Fleet Practices
- IV. GSA Sustainable Offerings
- V. On the Horizon



MVM's AFV Goals

- Provide access to the latest technology vehicles & solutions at affordable prices to help meet mandates and sustainability goals
- Support with vehicle selection, ordering & policy compliance
- Sustainability training



ALTERNATIVE FUEL CONSIDERATIONS



Alternative Fuels

Fuel Type	Fuel Source	Advantages	Disadvantages
Electricity Greater Availability	Burning of high-sulfur coal to solar cells	Low maint & repair cost, flexible/affordable fueling, zero tailpipe emissions, reduced dependence on oil	Vehicles are expensive, additional costs with charging infrastructure , range anxiety (perceived)
Propane (LPG)	Byproduct of petroleum refining	Costs less than gasoline, majority is produced domestically	Lower BTU rating than gasoline (lower fuel economy). No LD vehicles or vans available from GSA in 2015
Ethanol (E85)	Fermenting biomass, 85% ethanol, 15% unleaded gas	Vehicles available in all categories/less expensive, eliminates dependence on foreign oil	Somewhat corrosive, contains less energy than gasoline (less efficient), food source
Biodiesel (B20) Less Availability	Made from biomass, 20% biodiesel & 80% petroleum diesel	Contains 3.2x amount of energy it takes to produce it	Vehicles are expensive, contains less energy per unit than petroleum diesel



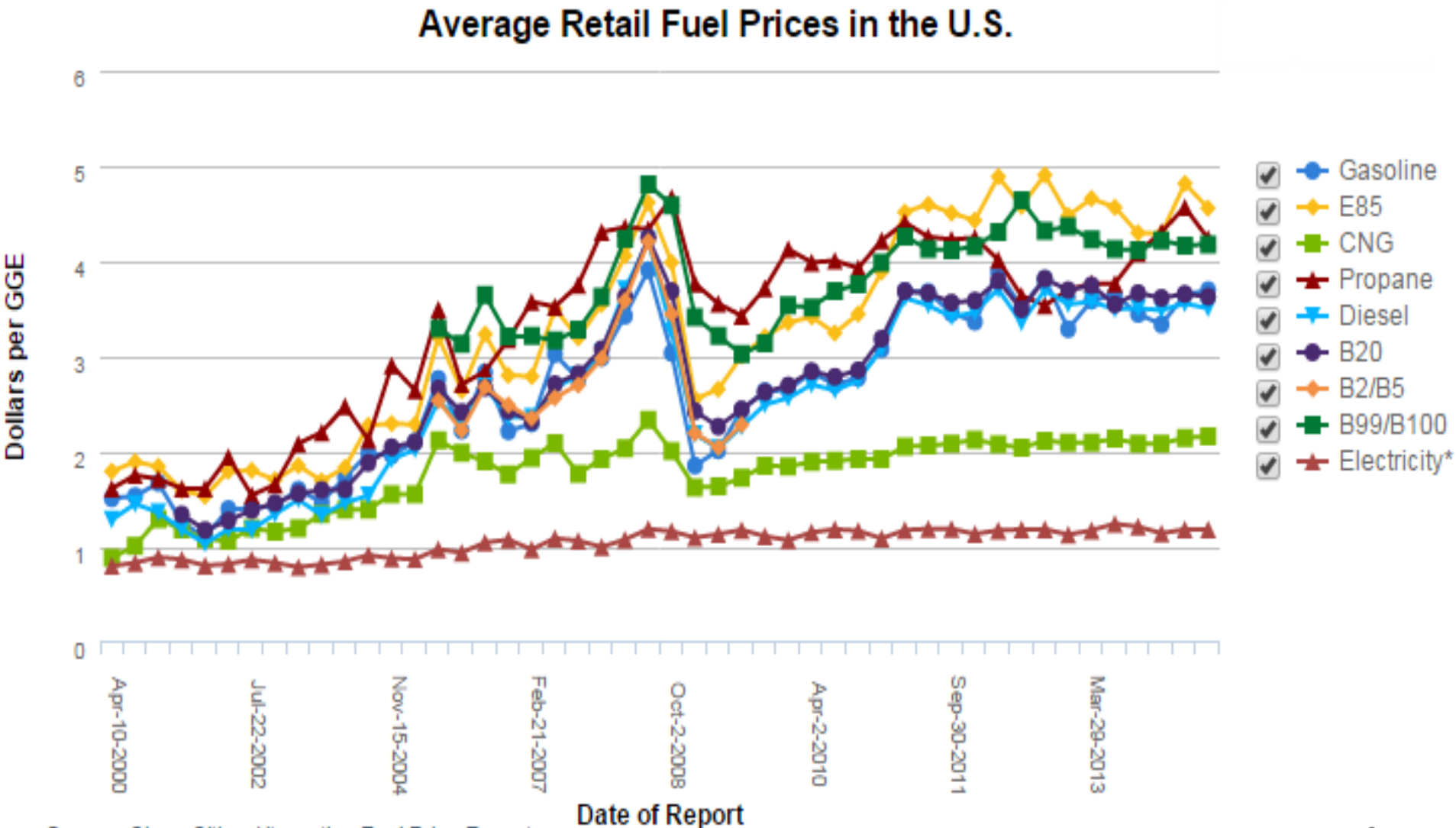
Alternative Fuels

Fuel Type	Fuel Source	Advantages	Disadvantages
Compressed Natural Gas (CNG)	Natural gas imported through pipelines	Variety of new, heavy-duty vehicles available in U.S, low fuel cost, more efficient fuel than gasoline	Vehicles are expensive, special mechanics, large tanks, limited fueling infrastructure
Liquefied Natural Gas (LNG)	Cooled natural gas-liquefies	Low emissions	Little to no products, complex & expensive fuel tanks
Hydrogen	“Re-forming” fossil fuel, electrolyzing water	Zero tailpipe emissions, traveling long distances	Expensive, difficult to store & transport, lack of fuel cell infrastructure/product

Limited Availability



Average U.S. Fuel Retail Prices





Fuel Considerations: Ethanol

- Approx. 1/6 of light duty models are E85 capable engines
 - Comparably priced to conventionally-fueled vehicles
- Only 1% of public fueling stations are currently E85 stations
- Tax benefits available for pumps with ethanol blends
- New CAFÉ Rule for 2017 models that reestablishes credit for tail pipe emissions



Fuel Considerations: Electric

- Range is an important consideration
- Standard 110V cord provided
 - 208-240V Level II station is optional
 - Cuts charging time in half
 - Allow collection and monitoring of charging data
- Station availability:
 - GSA Advantage Federal Supply Schedule 23V, 56, 10A, 63 and 51V
- Installation of charging station requires coordination with building manager and/or building leasing company

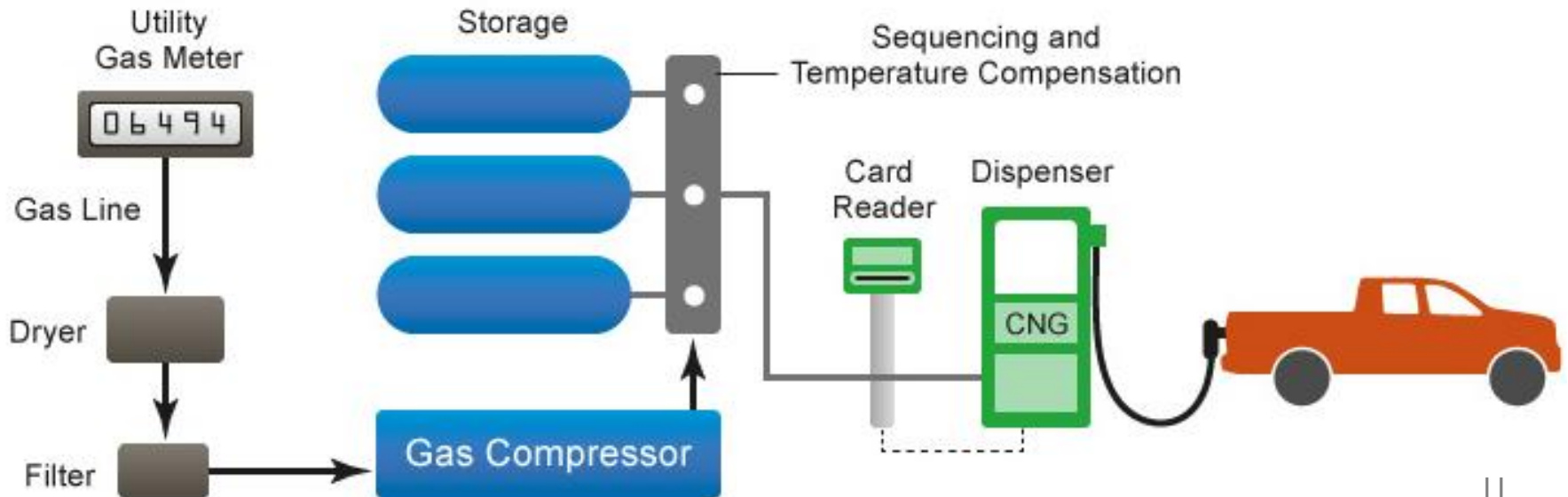


Fuel Considerations: CNG

CNG Station Types (Cost Approx \$1-5 million) Public or Private?

- Time-fill Saves cost, dispensed slowly, best for fleets returning to central lot
- Combo Fill Middle ground
- Fast-Fill Most expensive, a must for public-access

Fast Fill Station





SUSTAINABLE FLEET PRACTICES



How to Implement Sustainability

- Define agency fleet vision and align to specific goals
- Know your Federal sustainability requirements
- Know your fleet demographics and available data resources
- Right-size and optimize fleet
- Evaluate efforts and continue AFV education



How to Implement Sustainability: Define Agency Vision

- Senior Sustainability Officer
- Vehicle Allocation Methodology
- Infrastructure development
- GSA Fleet's customer acquisition questionnaire



How to Implement Sustainability: Know Federal Requirements

- EPA Act (1992/2005)
- Executive Order 13423 (2007)
- Executive Order 13514 (2009)
- Energy, Independence & Security Act (EISA) Sec. 141 (2007)
- (2011) Presidential Memorandum

FY 2015 EISA 141 Compliance Thresholds	
Vehicle Type	Maximum CO2 emissions
Passenger Cars	305 g/mile
Light-Duty Trucks and MDPVs	380 g/mile
E85 Passenger Cars	350 g/mile on E85
E85 Light-Duty Trucks and MDPVs	425 g/mile on E85



How to Implement Sustainability: Fleet Demographics & Data Resources

- Location
 - Alternative fuel station proximity
 - Climate
 - City/Highway
 - California Air Resources Board's Emission Standards
 - Fleet mix (sedans vs. trucks)
- Available Data Resources
 - GSA Fleet Drive-thru (leased); FedFMS (owned)
 - AFV Data Center (fuel locator)
 - WEX mobile fuel finder

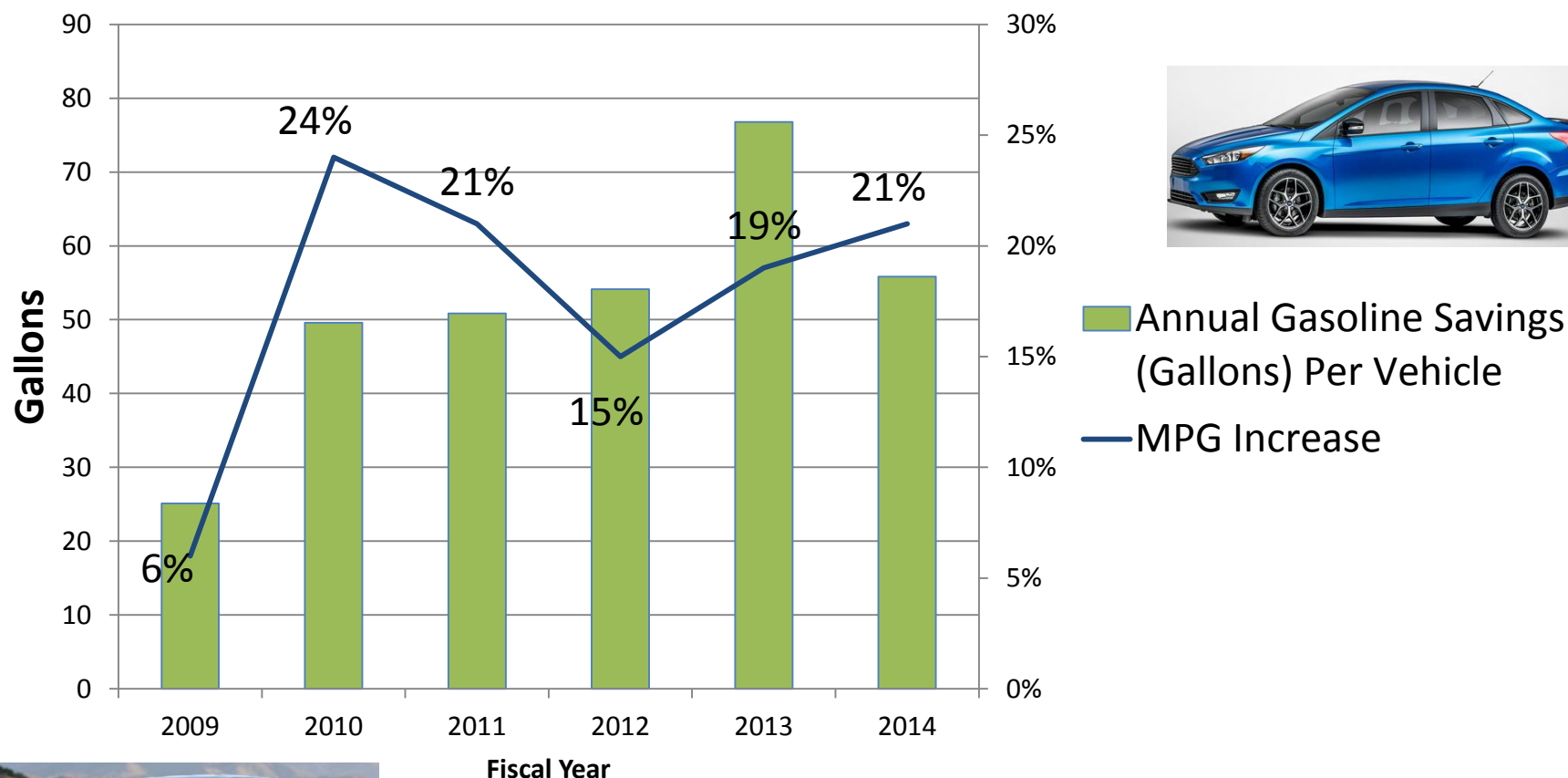


How to Implement Sustainability: Right Size Fleet

	 More GREEN	<i>Fuel Economy</i> 	 Less Green
Size	Small		Large
Transmission	Manual		Automatic
Vehicle Class	Sedan		Truck/SUV
Advanced Powertrain	Battery/Electric	Hybrid	Diesel/CNG/E85
Engine Displacement	Smaller		Bigger
Vehicle Weight	Lighter		Heavier
Cylinders	Less		More
Age	Younger		Older



How to Implement Sustainability: Optimize Fleet by Modernizing





How to Implement Sustainability: Evaluation and Education

- Evaluation
 - Develop performance measures / internal scorecards
 - Data-driven decisions through Fleet Management Information System
- Education
 - Driver Training
 - GSA Fleet Desktop Workshops
 - Drive-Thru Training - Sustainability Series

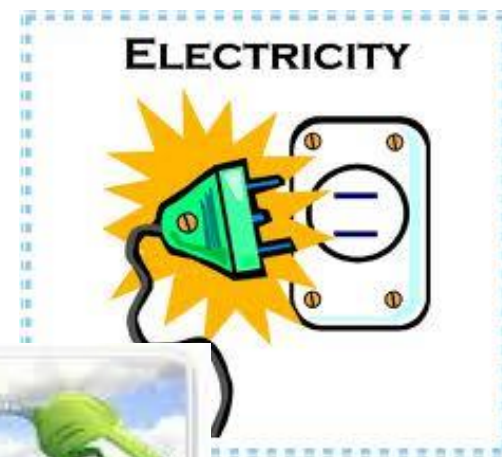


GSA SUSTAINABLE OFFERINGS



FY15 Alternative Fuel Vehicle Configurations Available

- 395 B20 Capable
- 207 E85
- 37 Hybrid Electric
- 28 Low Green House Gas-Emitting
- 26 Liquid Propane
- 13 Dedicated CNG
- 13 Bi-Fuel CNG/Gas
- 6 Pure Electric
- 3 Plug-in Electric/Gas
- 0 Liquefied Natural Gas





FY15 Low GHG Vehicles Available

- 55 Low GHG vehicle configurations
- Some vehicles only qualify when burning E85
- Some E85 low GHG vehicles come standard as gasoline in states that follow CARB emission standards
- In areas where E85 is not readily available, low GHG gasoline vehicles can count as AFVs.
- This year the 4X2 F150 on E85 is the **only** low GHG Pickup truck





FY15 Hybrid Opportunities

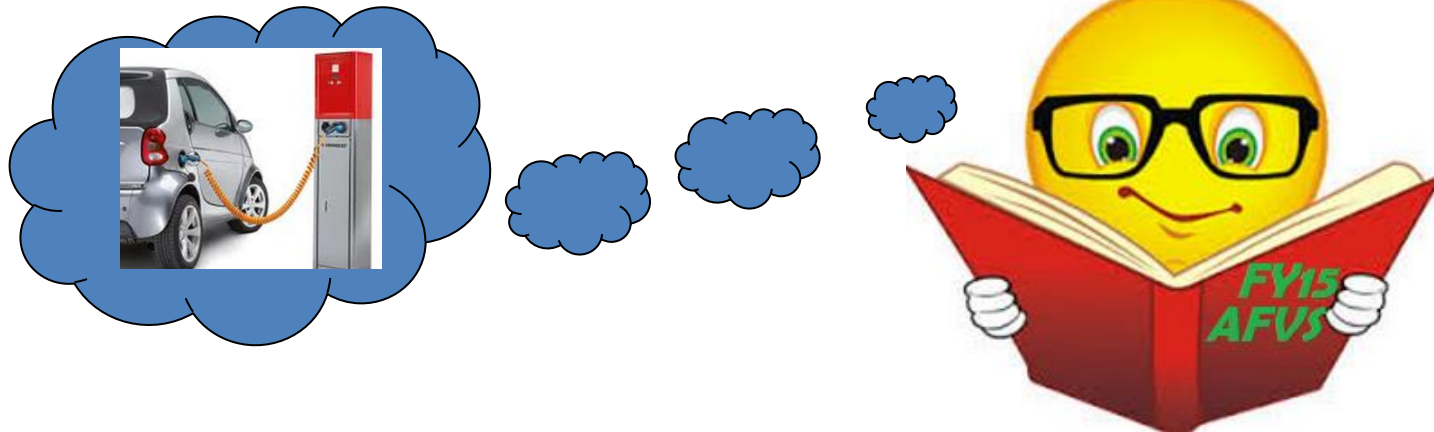
- GSA Fleet is funding the replacement of vehicles with new hybrid sedans, available to:
 - Agencies with owned/commercially leased vehicles that convert their vehicle(s) to GSA
 - Current GSA Fleet customers during the 2015 acquisition cycle (up to 3,000 in all)





FY15 AFV Product Guide

AFV Guide includes Low GHG Listing, LD AFV Static Listing, SINs that must adhere to EISA requirements tab and Federal Sustainability Requirements



[Link: FY15 Light-Duty Categories:AFV Configs \(AFV Guide\)](#)



FY15 AFV Acquisition Tool

- FY15 Acquisition Tool allows you to compare total cost to own versus lease:
 1. Select a SIN & Fuel Type.
 2. Tool provides all available vehicle options with prices and emissions data.
 3. Select Quantity of vehicles.
 4. Compare up to 3 vehicles at a time.





ON THE HORIZON



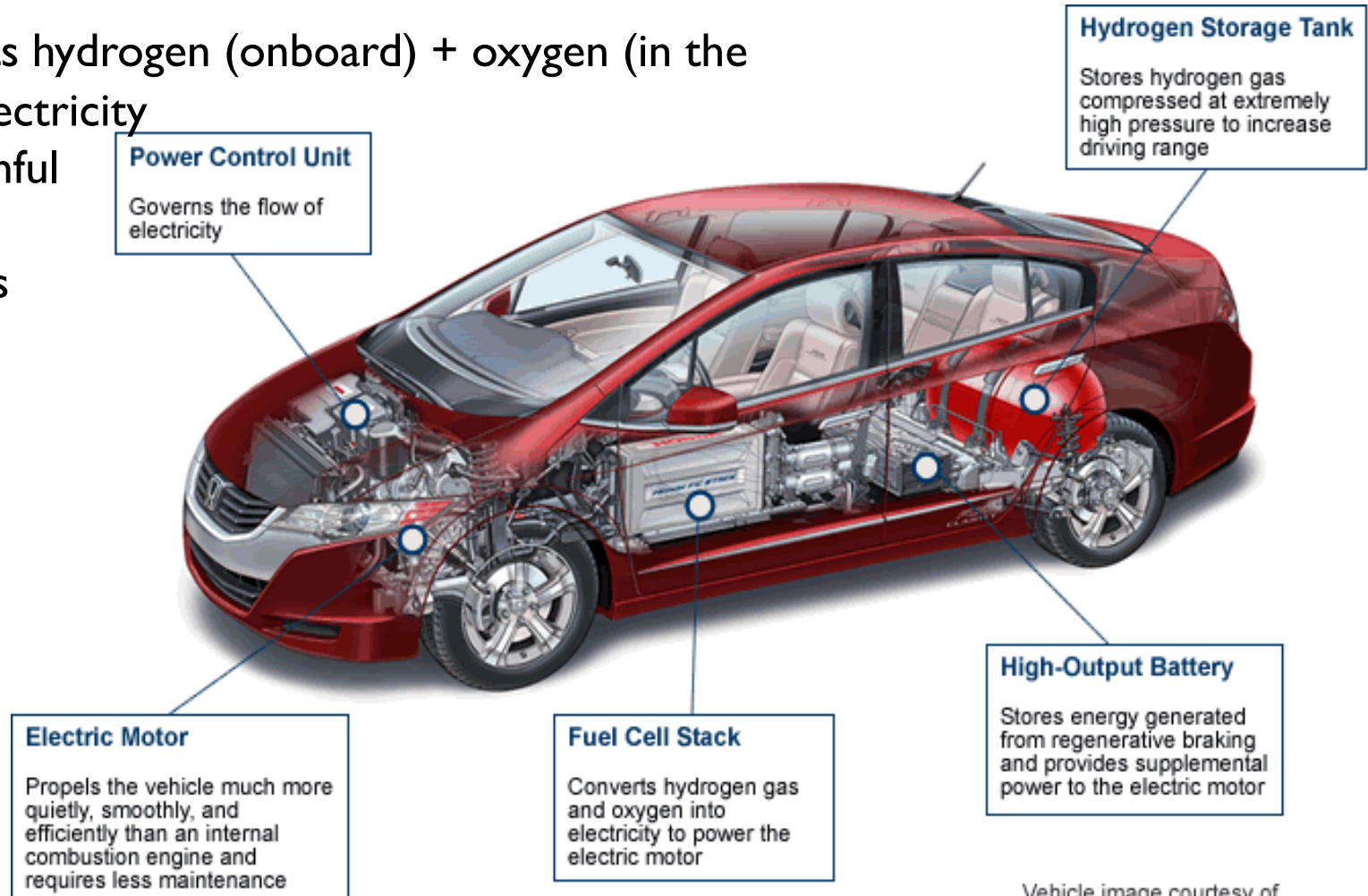
New Product Developments shaped by Federal and State Policy

- EPA's Renewable Fuel Standard (RFS) program
- State-developed Programs
(<http://www.afdc.energy.gov/laws/recent>)



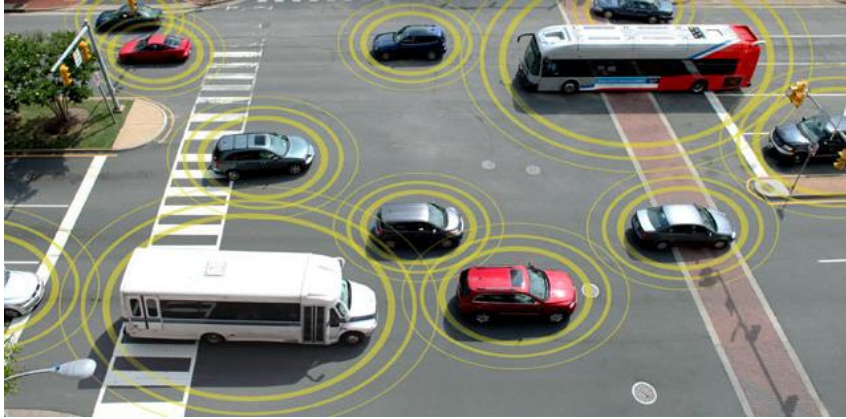
Hydrogen Fuel Cell Advancements

- Hydrogen Fuel Cell Vehicles
 - Converts hydrogen (onboard) + oxygen (in the air) to electricity
 - No harmful tailpipe emissions





Technology of the Future



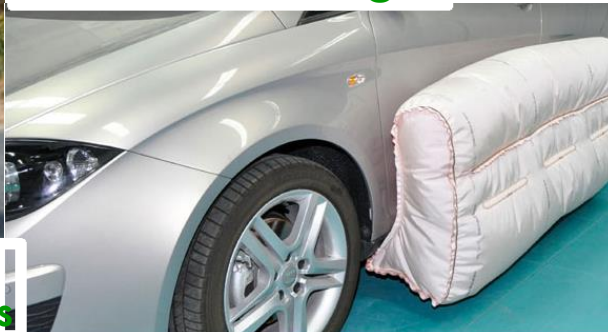
V2V/V2I, Department of Transportation

- Cars that talk to each other & the road (V2V or V2I)
- Self Driving Car
- Turbo Engine Advancements
- Airbags that stop cars
- Energy-storing Body Panels



Google's Self-Driving Car has logged over 200k miles

External Airbags





**THANK YOU!
QUESTIONS?**

PLEASE CONTACT THE AFV TEAM

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GSA Motor Vehicle Management Resources

- [GSA Fleet Drive-thru and Training](#)
- [Consolidate Your Vehicles With GSA Fleet](#)
- [Short Term Rental Program](#)
- [Dispatch Reservation Module](#)
- [Federal Fleet Management System \(FedFMS\)](#)
- [Car Sharing](#)
- [Alternative Fuel Vehicle Guide](#)
- [WEX Station Locator](#) / [DOE Station Locator](#)
- [2015 FFMT Presentations](#)